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(12) **UK Patent Application** (19) **GB** (11) **2 231 961 A** (13)
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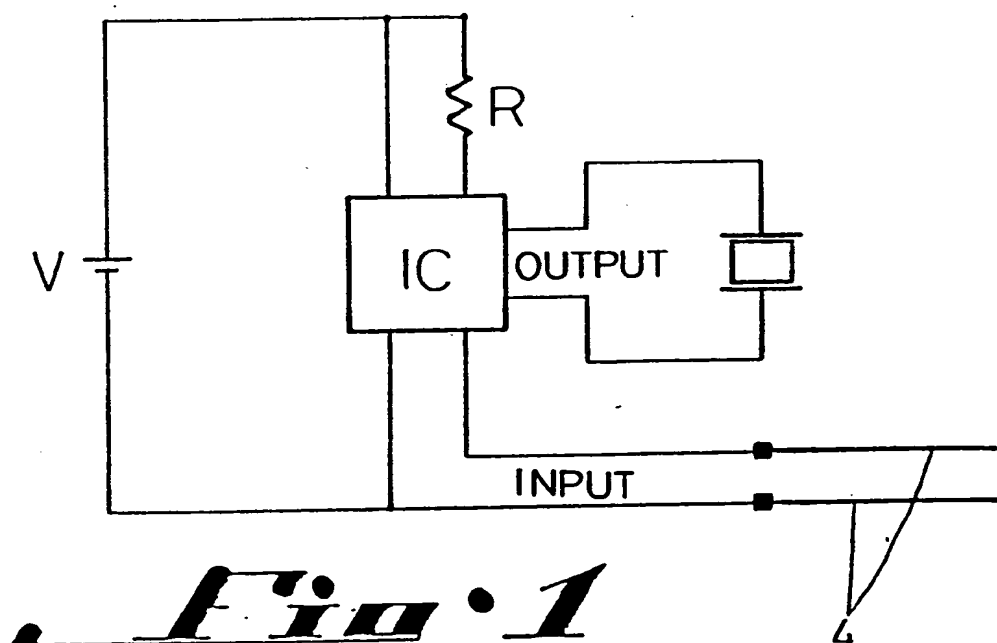
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(56) Documents cited
GB 2166870 A **GB 2074545 A** **GB 2065336 A**
GB 2034040 A **GB 1548895 A** **EP 0008508 A**

(58) Field of search
 UK CL (Edition J) **G1H**
 INT CL^{*} **G01F**

(54) **Liquid level sensing circuit**

(57) A circuit for connection to liquid level sensing probes (4) includes an IC driving a buzzer to produce an audio alarm signal when the probes are not in contact with the liquid. The IC is powered by a battery V via a current limiting resistor R. The probes may be mounted in a drip transfusion bottle or a flower vase.



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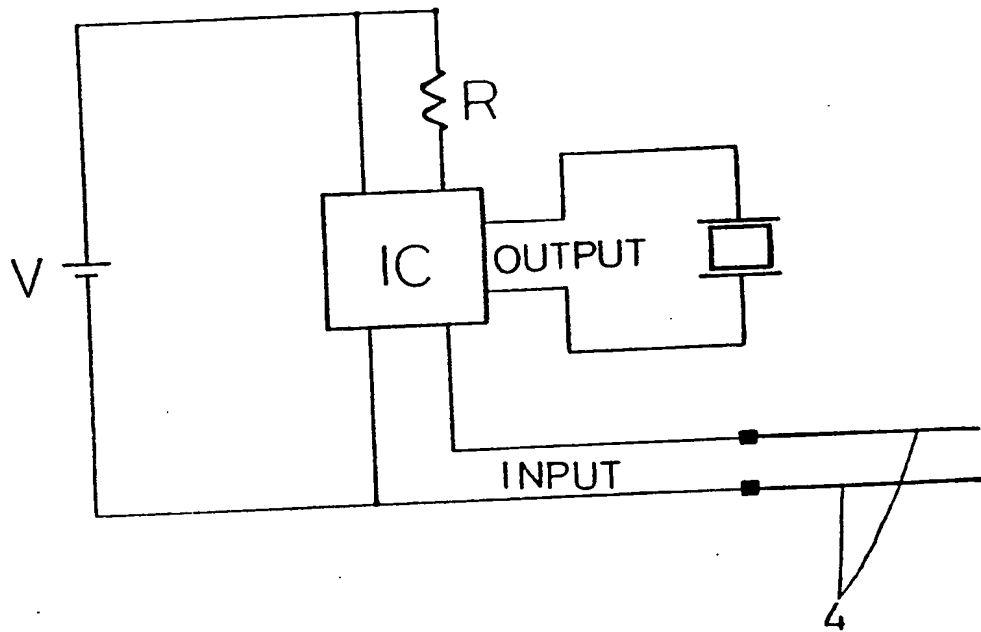


Fig. 1

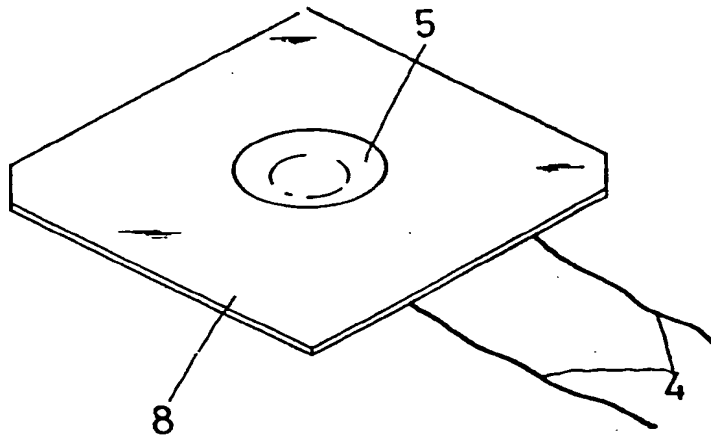
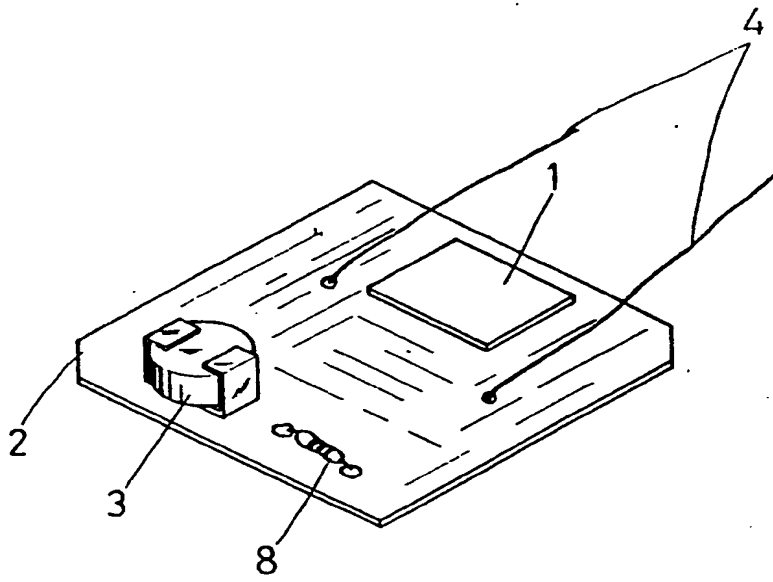


Fig. 2

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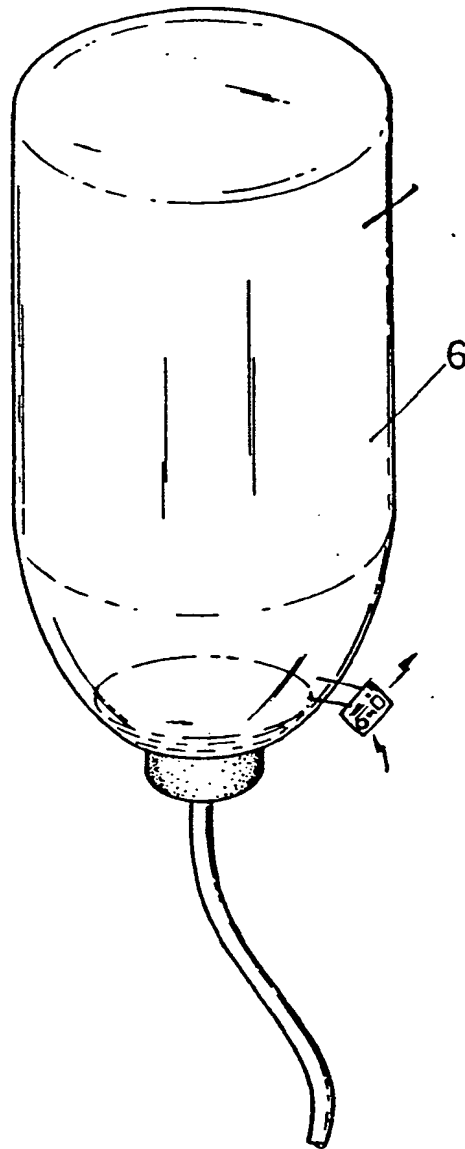


Fig. 3

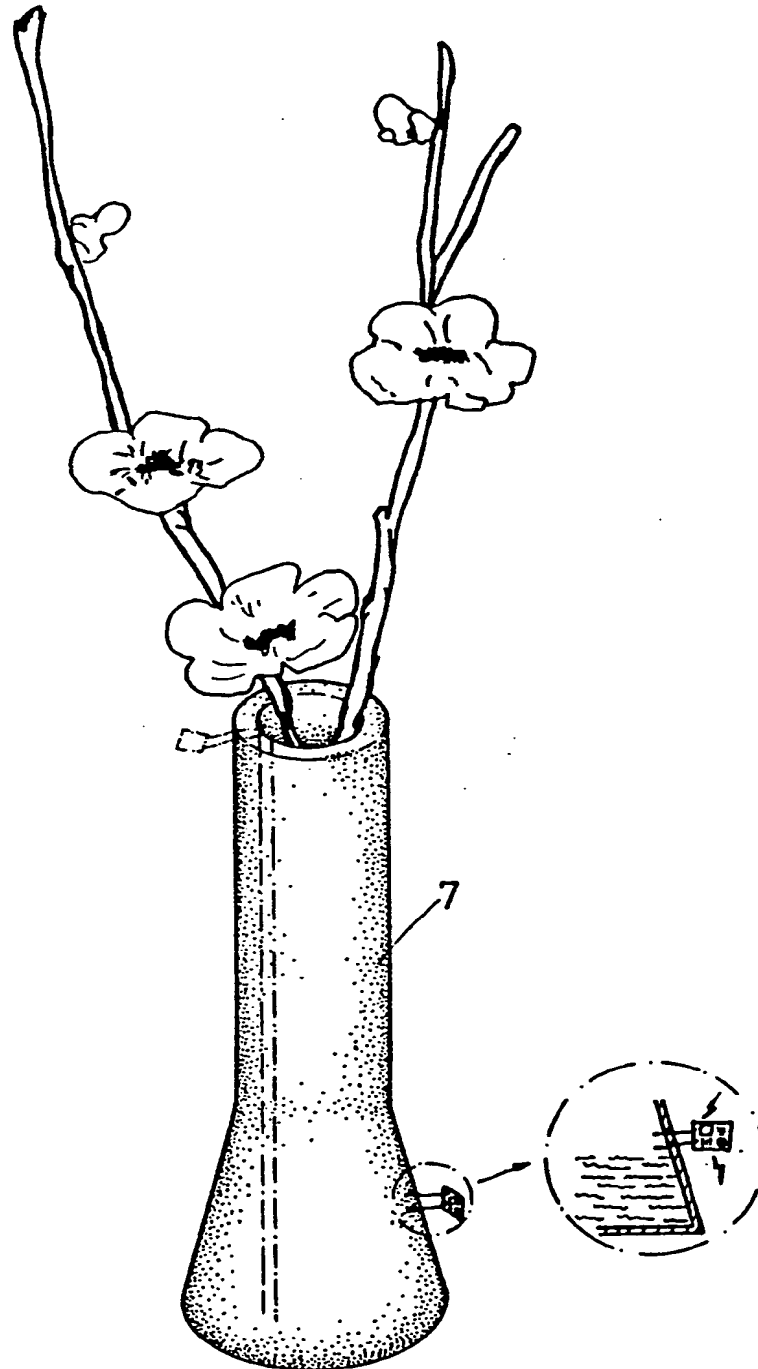


Fig. 4

TITLE

Drip transfusion bottle alarm device

BACKGROUND OF THE INVENTION

The present invention is to provide a drip transfusion bottle alarm device to automatically produce an audio alarm signal when the drip transfusion solution is fully consumed.

Regular hospitalized patients commonly have to take drip transfusion treatment. Because drip transfusion takes several hours each time, the patient or the family of the patient may be unaware of the dangerous that the transfusion solution has been completely consumed. In order to prevent from any accidents, the patient or the family of the patient shall have to keep watching the performing of the drip transfusion. However, to keep watching the performing of a drip transfusion is time-consuming and strenuous because a drip transfusion process requires several hours to complete.

SUMMARY OF THE INVENTION

The main object of the present invention is to provide a drip transfusion bottle alarm device which includes a pair of probes set at the inner bottom of a drip transfusion bottle to detect the solution level so as to give an IC with a signal to drive a buzzer to produce audio alarm signal when the probes are not in contact with the solution.

Another object of the present invention is to provide a drip transfusion bottle alarm device which may be used to match with vase or the like to detect the water level and provide an audio alarm signal automatically when the water is reduced to a predetermined level.

The above and other objects, features and advantages of the present invention may be fully understood from the following detailed description of the preferred embodiments considered in connection with the annexed drawings as hereunder.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a control circuit of the present invention.

Figure 2 is an enlarged schematic drawing of the present invention.

Figure 3 illustrates the application of the present invention to match with a drip transfusion bottle.

Figure 4 illustrates the application of the present invention to match with a vase.

CODES

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|-----------------------------|----------------------|------------------|
| (1) IC | (2) Mercury dry cell | (3) Resistor (R) |
| (4) Probe | (5) Buzzer | |
| (6) Drip transfusion bottle | (7) Vas | (8) PC Board |

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figures 1 and 2, a drip transfusion bottle alarm device is including a PC board (8) for mounting thereon of an IC (1), a mercury dry cell V (2) to provide the IC (1) with necessary working power, a resistor R (3) connected to the IC (1) in series to limit the current, a buzzer X (5) connected to the IC (1) in parallel to provide audio sound signal, two probes (4) connected to the two input terminals of the IC (1) to project therebeyond.

When the two probes (4) are set in a water solution during operation, the IC (1) receives no signal input. Therefore, no output is produced from the IC (1), and the buzzer X (5) does not produce audio sound signal. When one or both of the two probes (4) leave away from the water solution, a signal will be received by the IC (1) through its input terminals. Thus, the IC (1) will provide an output signal to drive the buzzer X (5) to produce an audio sound of alarm signal.

When the present invention is used to match with a drip transfusion bottle (6) as shown in Figure 3, the probes (4) are directly inserted into the bottle (8) and set at the inner bottom. As soon as the drip transfusion solution is reduced to a level below the position of the probes (4), the IC (1) will immediately produce a signal to drive the buzzer

(5) to give an audio alarm signal to give warning.

The present invention may be used to match with a vase (7) as shown in Figure 4. In this embodiment, the probes (4) are inserted into the vase (7) and positioned at the inner bottom area to detect the water level in the vase (7). If the vase (7) is made of harden material through which the probes (4) couldn't penetrate, the conductor pins of the probes (4) may be extended to let the probes (4) be set inside the vase (7) at the inner bottom from the top opening, as indicated in the dotted lines. When the water level drops down to a position below the probes (4), the IC (1) will immediately drive the buzzer (5) to produce an audio alarm signal.

In conclusion, the present invention is to provide such an alarm device to automatically give an audio alarm signal as soon as the water level drops down to a position below the probes of the present invention which were set in the water.

What is claimed is:

A drip transfusion bottle alarm device, including a PC board having mounted thereon an IC, a mercury dry cell V to provide said IC (1) with necessary working power, a resistor R to connect to said IC in series to limit the current, a buzzer X to connect to said IC (1) in parallel to provide audio sound signal, two probes to connect to the two input terminals of said IC to project therebeyond, wherein the said two probes which are set in a water solution produce a signal to said IC when they are not in contact with the water solution, so as to further drive said buzzer to produce an audio alarm signal.